

In the Drawings

The attached sheet of drawings includes changes to FIG. 4. This sheet, which includes FIGS. 4 and 5, replaces the original sheet including FIGS. 4 and 5. In FIG. 4 numeral 146 replaces numeral 142 and numeral 142 replaces numeral 144.

Attachment: Replacement Sheet
Annotated Sheet (showing changes made)

Remarks

This is in response to the Office Action mailed April 7, 2005. The amendments are proper, do not introduce new matter, more particularly set forth and distinctly claim the subject matter regarded as the invention by the Applicant, and are not narrowing in view of a prior art rejection.

Support for Amendments

Support for the amendment to claim 1 is found at least in the embodiments of FIG. 8 and the corresponding discussions which disclose the filter chamber 160 disposed in the internal fluid stream 176 immediately downstream of the recirculating filter 138.

Support for the amendment to claim 2 is found at least in the embodiments of FIG. 8 and the corresponding discussions which disclose the impact filter medium 174.

Support for the amendment to claim 3 is found at least in the embodiments of FIG. 8 and the corresponding discussions which disclose the impact filter medium 174 supported by the shroud filter wall 162.

Support for the amendment to claim 4 is found at least in the embodiments of FIG. 1 and the corresponding discussions.

Support for the amendment to claim 5 is found at least in the embodiments of FIG. 8 and the corresponding discussions which disclose the surface filter medium 172. The term “carpet filter” is a term of art known to the skilled artisan.

Support for the amendment to claim 6 is found at least in the embodiments of FIG. 8 and the corresponding discussions.

Support for the amendment to claim 7 is found at least in the embodiments of FIGS.

7 and 8 and the corresponding discussions which disclose the diffusion aperture 156 portion of the diffusion path 154 being disposed in fluid communication with the fluid chamber 160.

Support for the amendment to claim 8 is found at least in the embodiments of FIG. 7 and the corresponding discussions.

Support for the amendment to claim 9 is found at least in the embodiments of FIG. 8 and the corresponding discussions.

Support for the amendment to claim 10 is found at least in the embodiments of FIG. 10 and the corresponding discussions which disclose the breather filter 170.

Support for the amendment to claim 11 is found at least in the embodiments of FIG. 9 and the corresponding discussions which disclose the filter 178.

Support for the amendment to claim 12 can be found at least in the discussions on page 8 beginning at line 15.

Support for the amendment to claim 13 can be found at least in the embodiments of FIG. 1 and the corresponding discussions.

Support for the amendment to claim 21 can be found at least in the embodiments of FIG. 4 and the corresponding discussions.

Support for new claims 22-25 can be found at least in the embodiments of FIG. 8 and the corresponding discussions.

Support for new claim 26 can be found at least in the discussions on page 8 beginning at line 15.

Support for new claim 27 can be found at least in the embodiments of FIG. 8 and the corresponding discussions which disclose the impact filter medium 174.

Clarification of “Absorb” Versus “Adsorb”

It is noted that the original claims recited the term “absorb,” while preferred embodiments disclosed the use of adsorbing filter materials such as carbon-based materials and electrostatic materials. The skilled artisan will recognize that a filter apparatus can be correctly viewed as an “absorbing filter” in that the filter as a whole assimilates the contaminants even if by an adsorption process.

Summary of Telephone Conference

The Applicant is grateful to Mr. Heinz for participating in the telephone conference on August 3rd leading to the discovery that the Office Action as received did not include the Addendum A, and grateful to Mr. Heinz for providing a copy of the Addendum A in a very timely manner.

Rejection Under 35 USC 112, Second Paragraph

Claim 21 was rejected for lack of antecedent basis for the phrase “the means for filtering.” Claim 21 has been amended to depend from claim 20 rather than from claim 19, thereby obviating this rejection. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection Under 35 USC 102(e)

Claims 1-5, 20 & 21 were rejected as being anticipated by Tuma ‘498. This rejection is respectfully traversed.

Claim 1

Tuma '498 cannot sustain a Section 102 rejection of amended claim 1 which recites at least the following:

A filter apparatus comprising...a filter chamber disposed in the internal fluid stream portion immediately downstream of the recirculating filter, the filter chamber capable of filtering an external fluid stream through a diffusion path.
(excerpt of claim 1, emphasis added)

The present embodiments as claimed in claim 1 contemplate an integrated filter system for filtering both the recirculating internal fluid stream and the external fluid stream. For performance sake, the external fluid stream advantageously communicates with the enclosure at a location away from the data storage discs. For simplicity and cost sake, both of these fluid streams are advantageously filtered by a common filter apparatus. However, providing flow conditions that are conducive to the external fluid flow at a location beyond the edge of the discs, and especially in the relatively high pressure region of the recirculating filter, can be problematic.

The present embodiments resolve the problem in a most straightforward (and cost effective) manner by introducing the external fluid stream by a *filter chamber disposed in the internal fluid stream portion immediately downstream of the recirculating filter*.... As shown in FIG. 8, for example, the channel 158 guides the internal fluid stream 176 through the recirculating filter 138. The internal fluid stream impinges the filter chamber 160 immediately downstream of the recirculating filter. In order to flow the external fluid stream through the diffusion aperture 156, a region of relatively lower pressure is created downstream of the recirculating filter 138. In the embodiments of FIG. 8, that is accomplished by discontinuing the channel at the recirculating filter; that is, the channel

area in communication with the upstream face of the recirculating filter is substantially less than the enclosure area in communication with the downstream face of the recirculating filter. Hence, the velocity of the internal fluid stream increases downstream of the recirculating filter, creating a pressure drop across the recirculating filter.

Contrarily, Tuma '498 discloses the filter chamber 15b disposed outside the internal fluid stream portion immediately downstream of the recirculating filter 40b. (see Addendum A). More particularly, Tuma '498 requires the channel 23b both upstream and downstream of the recirculating filter. In fact, the channel decreases in size to increase the fluid pressure: "The width of air channel 23b narrows or constricts from scoop 32a to mouth 33b...." (Tuma '498, col. 11 lines 35-36, emphasis added) Hence, the lack of a relatively lower pressure region precludes placing the filter chamber within the internal fluid stream. Rather, Tuma '498 provides an opening in the channel, between members 37 and 37', that communicates a venturi effect on the filter chamber.

By placing the filter chamber within the internal fluid stream, the embodiments of the present invention provide a less complex design that is accordingly less costly to manufacture. The simplified flow path of the present embodiments can also be packaged within a relatively smaller envelope and thus utilized in today's smaller form factor data storage devices.

Another significant difference resulting from the structural differences of the present embodiments and Tuma '498 is that the internal fluid stream 176 (see FIG. 8) is filtered by the filter chamber 160 in addition to the recirculating filter 138. See, for example: "Corrosive gases and organic vapors carried along in the air stream 176 (of FIG. 8) that fail to be collected by the re-circulating filter 138 are collected by the absorption

filter 178.” (specification, page 8 lines 11-12) Hence, the present embodiments provide a two-stage filtering of the internal fluid stream as opposed to the single-stage filtering of Tuma ‘498.

Summarizing, Tuma ‘498 is silent regarding an integrated filter apparatus with the filter chamber for the external fluid stream disposed in the internal fluid stream.

Accordingly, Tuma ‘498 cannot sustain a Section 102 rejection because it does not identically disclose all the recited features of claim 1. Reconsideration and withdrawal of the present rejection of claim 1 and the claims depending therefrom are respectfully requested.

Claim 20

Tuma ‘498 cannot sustain a Section 102 rejection of claim 20 which recites at least the following:

means for filtering contaminants....
(excerpt of claim 20)

Claim 20 is written in accordance with 35 U.S.C. §112, sixth paragraph. The Applicant has identified the function associated with the recited “means” element as being filtering both an internal fluid stream and an external fluid stream in the same location of a data storage device. The Examiner is obliged as a matter of law to construe this means element as the disclosed structure, and equivalents thereof, that are capable of the identical function. See *B. Braun Medical, Inc. v. Abbott Lab.*, 43 USPQ2d 1896, 1900 (Fed. Cir. 1997); *In re Donaldson Co. Inc.*, 26 USPQ2d 1845 (Fed. Cir. 1994)(*en banc*); *In re Dossel*, 42 USPQ2d 1881 (Fed. Cir. 1997); *Supplemental Examination Guidelines for Determining the Applicability of 35 U.S.C. 112, Para. 6*, 65 FR 38510. Failure to do so constitutes reversible error.

As discussed above, the present embodiments disclose structure that contemplates placing the filter chamber filtering the external fluid stream within the internal fluid stream. Contrarily, Tuma '498 isolates the filter chamber from the internal fluid stream, requiring a relatively more complicated and larger structure to impart a negative pressure from the internal fluid stream to the filter chamber. Also as discussed, the structure of the present embodiments provides a two-stage filtering of the internal fluid stream, as opposed to the single-stage filtering of Tuma '498. Clearly, the structures of the present embodiments and Tuma '498 operate in different ways, and are thus not structural equivalents, making Tuma '498 beyond the contemplated scope claim 20.

When this means element is properly construed, it is clear that Tuma '498, taken as a whole, fails to disclose any equivalent structure in relation to the embodiments of the present invention as claimed. Reconsideration and withdrawal of the present rejection of claim 20 and the claims depending therefrom are respectfully requested.

Rejection Under 35 USC 103(a)

Claims 6, 12, and 16 were rejected as being unpatentable over Tuma '498. This rejection is respectfully traversed; first, because the claims 6 and 12 have been substantively amended and claim 16 canceled to obviate the rejection, and second because claims 6 and 12 are allowable as dependent claims of an allowable independent claim for reasons discussed above. Reconsideration and withdrawal of this rejection are respectfully requested.

New Claims

New claims 22-27 replace canceled claims 14-19 and are directed to a method associated with the claimed apparatus of the present embodiments. Independent claim 14 is allowable over all the art of record at least for the reason that it recites *fluidly mixing the internal fluid stream portion and an external fluid stream with a filter chamber disposed within the internal fluid stream immediately downstream of the recirculating filter*, as discussed above. Claims 23-27 are allowable as dependent claims of an allowable independent claim.

Allowable Subject Matter

The Applicant gratefully acknowledges the indication of allowable subject matter of claims 7-11, 13-15, and 17-19. The Applicant has opted not to place these claims in independent form because it is entitled to the broader scope of the independent claim from which they depend, for reasons discussed above.

References Cited But Not Applied

The Applicant believes the pending claims are allowable over all the art of record. Particularly, neither Voights '484 nor Beck '365, nor any other reference of record, discloses or suggests placing the filter chamber for the diffusion filter within the recirculating fluid stream.

Conclusion

The Applicant respectfully requests reconsideration and allowance of all of the claims pending in the application. This Response is a complete response to the Office Action mailed April 7, 2005. The Applicant has also submitted herewith a request for telephone interview with the Examiner, if at such time after having reviewed this Response it is determined that all pending claims are not in condition for allowance. The interview is necessary because of the extent to which the claims are presently amended, which is likely to require verbal communications to fully appreciate and understand Applicant's intentions in doing so. Should any questions arise concerning this Response the Examiner is requested to contact the below signed Attorney.

Respectfully submitted,

By: _____



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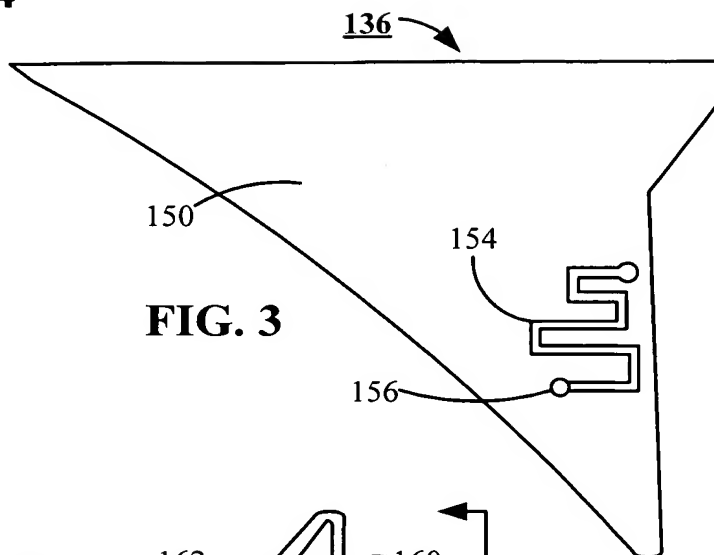


FIG. 3

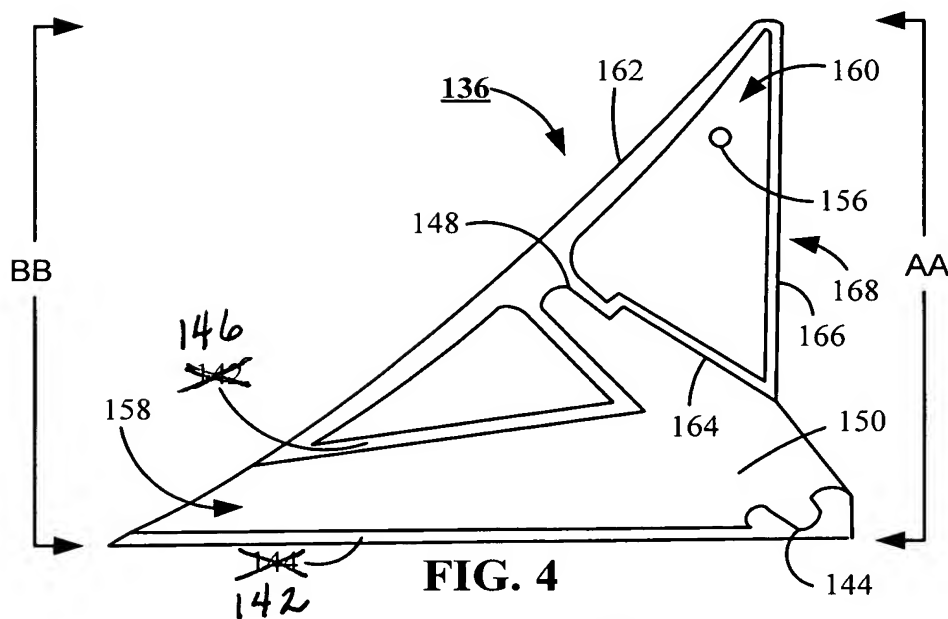


FIG. 4

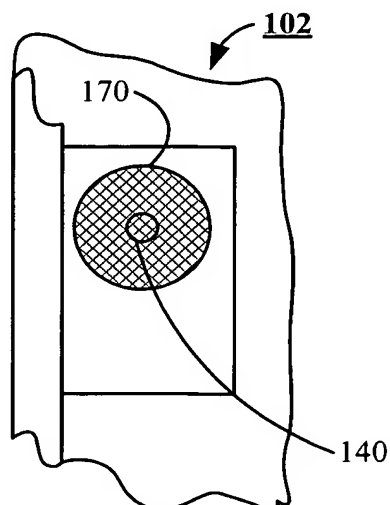


FIG. 5